

## The Evening Sky.—March 15 to April 15.

In order that those observers of the sky who compare it with the star map may at once find some little information about any object which interests them, I shall every month give a short description of the constellations visible about nine o'clock in alphabetical order, after treating of the Moon and Planets.

### THE MOON.

Third quarter, March 14th; new, March 20th; first quarter, March 28th; full, April 5th; third quarter, April 12th.

### THE PLANETS.

*Saturn* is in Leo, near Regulus, and resembles a star of the first magnitude. It is one of the largest planets, being second only to Jupiter in size, and is nine times as large as the Earth. Nevertheless, its distance from the Sun of 880 millions of miles renders it a difficult object for close and accurate observation. In proportion to its bulk it weighs least of all the planets, and is so light that it would float in water. Research having shown that its surface, from its specific gravity, cannot be either liquid or solid, it follows that its ingredients consist of heated vapours, which are kept in constant activity by the process of cooling.

The Saturnian system consists of a globe surrounded by a wide flat ring, and accompanied by eight satellites. The globe in shape is, like the Earth, an oblate spheroid, and has on its surface darker and lighter bands, generally parallel to the equator, with occasional spots. These spots are the chief guide we have to the period of revolution of the planet on its

own axis, which appears to be less than half that required by the Earth, namely, ten and a-quarter hours.

The ring presents a unique appearance among the planets, and even among the stars so far as we can ascertain. It really consists of three concentric rings, of which the middle one, known as B, is the brightest. The outside one, A, is less brilliant, and the inside one, C, is dark instead of light, and looks like a crape or gauze veil stretched more than half way between B and the globe. It is difficult to trace where C begins or B ends, as they seem to merge into one another gradually.

These rings used to be considered solid, then the fluid theory held ground for a time, but now the accepted idea is that each ring is a collection of independent satellites, each revolving round the planet in its own orbit in a period of time corresponding to its distance from the globe.

*Saturn* revolves round the Sun in  $29\frac{1}{2}$  years, and as the ring is inclined  $27^\circ$  to the plane of the ecliptic, it follows that we sometimes see the north and sometimes the south side of the ring, while midway between each we see the ring edgewise, and it practically disappears for ordinary observers. At present we see the south side of the ring, but it is closing up, and in 1892 the edge will be turned towards the Sun. *Saturn's* eight attendants vary in size, the largest, Titan, being not much smaller than Mars. No other planet has so large a number of satellites.

*Uranus*, on a fine clear night, is visible to the naked eye, the size of a star of the sixth magnitude. It is at too great a distance for us to know much about it, being 1770 millions of miles from the Sun, but its globe has been found to be flattened, and to be accompanied by four satellites, two of which can be seen only by the most powerful telescopes yet made. The peculiarity of these moons is in their orbital motions being retrograde, the only instance known in the Solar System.

*Mercury*, *Venus*, *Mars*, *Jupiter*, and *Neptune* are not visible in the evening during this month.

### FIXED STARS.

*Auriga*.—Capella is by some astronomers considered to be the brightest star in the northern sky, though others place it second to Sirius. Its light takes eleven years to be transmitted to us.



*Boötes*.—The brightest star in this constellation is called Arcturus, and its name always gives us its position—ἀρκτος, a bear; and οὔρος, a guardian—therefore, it is the star that guards the Bear. It has a large proper motion, having moved two and a-half times the Moon's diameter since the days of Hipparchus.

Boötes contains several pairs of stars, but is poor in clusters and nebulae.

*Cancer*.—The fine cluster, Praesepe, is the only distinguishable feature in this constellation.

*Canis Minor*.—Procyon is a fine pale yellow star with several minute attendants. It is far enough away for its light to take twenty-six years in reaching us, and is at present receding further at the rate of sixty-three miles per second.

*Coma Berenice*.—A collection of stars, which at a greater distance would seem to be a nebula.

*Corona Borealis* is more aptly named than some, but contains nothing of special interest to the ordinary observer.

*Crater* is one of several appendages to Hydra. That star in the Map which is most westerly is of a most intense and curious colour, scarlet and almost blood-red.

*Draco*.—A long winding constellation, always visible. Half-way between the Pole Star and  $\gamma$  Draco is a nebula by means of which Huggins obtained his first gaseous spectrum.

*Gemini*.—Castor and Pollux are of the first magnitude, Castor is receding twenty-five miles per second and Pollux approaching forty-nine.

*Hercules*.—One of its stars, of a deep orange colour, is interesting as occupying that point in the sky towards which the solar system is travelling, according to Herschell and Argelander.

*Hydra*.—A long sinuous constellation, containing nothing of interest to the naked eye.

*Leo*.—The fore part resembles a sickle, with Regulus at the bottom of the handle. This is a star of the first magnitude, and used sometimes to be called Cor Leonis, because it occupied the place of the heart in the old drawings of the Lion made by the ancients. It is flushed white in colour, and is leaving us at the rate of twelve to seventeen miles per second.

*Libra*.—The star in the map near the end of the word

Libra is of a beautiful pale green colour, very uncommon among conspicuous stars.

*Lynx* contains a number of stars with few conspicuous leaders.

*Lyra*.—Vega, to some observers, ranks above Capella. It is pale sapphire, and is approaching us at the rate of from forty-four to fifty-four miles per second. It has a companion, small-blue in colour.

The star just below the name in the map is a double-double. One pair consists of a yellow and a ruddy star, the other has both white. The former revolve round each other in 2000 years, the latter in 1000 years, while possibly both may revolve round a common centre of gravity in less than 1,000,000 years.

*Ophiuchus* is very barren to the eye, nearly all its stars being telescopic.

*Ursa Major*.—This constellation extends much further than the region occupied by the seven stars so well known to everybody. It is curious to find (on the authority of Dr. Mathew, 1712) that the Red Indians called these stars Paukunawaw, *i.e.*, the Bear, long before they were visited by Europeans. The Pointer nearest to the North Pole is approaching us at the rate of from forty-six to sixty miles per second, but the other six are receding at from seventeen to twenty-one miles per second.

*Ursa Minor* has an exceptionally long tail for a Bear, at the end of it being Polaris or the Pole Star, only  $1^{\circ} 20'$  from the North Pole, and getting nearer to it every year until 2095, when it will again glide slowly away from it. Polaris is an easy double star, being visible in telescopes of even  $1\frac{1}{4}$  inch.

*Virgo*.—Its principal stars form a Y. For the possessors of telescopes it has a wonderful nebulous region, but this is hidden from the naked eye.

ANNIE LIPSCOMB.